

# VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Santhi Bastawad Road, Machhe, Belgaum- 590014, KARNATAKA



**Project Report**

**On**

## **“TRACING OF GROUND WATER USING ISOTOPE TECHNIQUE IN TUMKUR DISTRICT”**

Submitted in partial fulfillment of requirements for the award of degree of

**BACHELOR OF ENGINEERING**

**IN**

**CIVIL ENGINEERING**

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## **ABSTRACT**

With work providing input for world bank funded project “**Tracing Of Groundwater Using Isotope Technique in Tumkur District**”, this work was conducted in collaboration with National Institute of Hydrology, Roorkee.

Different types of lake, tubewell, openwell, in Tumkur district were taken for analysis of water sample.

A dual inlet mass spectrometer was fabricated in National Institute of Hydrology, Roorkee, for the purpose of measuring isotopic ratio of oxygen and hydrogen present in the water sample.

The point located for the study was chosen in consultation with scientist from national institute of hydrology. The GPS and Google earth being the means of communication for the point chosen From the isotopic ratio of oxygen and hydrogen the signature of ground water were estimated.

Measurement of hydrogen and oxygen isotopes in water is very important for carrying out various hydrological studies. In the present report, measurement techniques of hydrogen and oxygen isotopes in water are described along with sampling procedures. This report also includes fundamentals of hydrogen and oxygen isotopes in hydrology, isotopic ratios of natural waters and variation of isotopic fractionation of meteoric water.